

**Remarks**

Applicant respectfully requests reconsideration. Claims 1-4 and 37-44 were previously pending in this application. Claims 2, 3, 38-40 and 42-44 have been canceled. Claims 1, 37 and 41 are now pending.

Claim 1 has been amended to recite that the claimed cell recombinantly expresses SEQ ID NO:45 or fragments thereof that have N-type calcium channel voltage regulated calcium influx activity. Support for the amendment is found throughout the specification, including at the description of the N-type calcium channel activity in the paragraph bridging pages 16-17 and on page 25, lines 9-21. No new matter has been added.

**Rejection Under 35 U.S.C. § 112**

1. The Examiner rejected claims 1-2, 37-38, and 41-42 under 35 U.S.C. § 112, first paragraph, as not enabling. Applicant respectfully requests reconsideration of this rejection.

Applicant has amended claim 1 to recite specifically SEQ ID NO:45 and functional fragments thereof that have N-type calcium channel activity. The Examiner has indicated that cells recombinantly expressing SEQ ID NO:45 are enabled. Applicant submits that fragments of this defined sequence that are active in having N-type calcium channel activity as described in the specification also are enabled because one of ordinary skill in the art could make and use such fragments without undue experimentation. Based on the known basic structure of N-type calcium channels and the structural requirements for voltage regulated calcium influx through such channels (see e.g., Raghbir et al., J. Neurosci. 21:8495-8504, 2001, a copy of which is enclosed herewith), the skilled person can readily make and use such active fragments of SEQ ID NO:45. Accordingly, withdrawal of this rejection is respectfully requested.

2. The Examiner rejected claims 1-2, 37-38, and 41-42 under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. Applicant respectfully requests reconsideration of this rejection.

Applicant has amended claim 1 to recite specifically SEQ ID NO:45 and functional fragments thereof that have N-type calcium channel activity. Based on the known basic structure of N-type calcium channels and the structural requirements for voltage regulated calcium influx through such channels, the skilled person can readily envision active fragments of SEQ ID NO:45. Accordingly, withdrawal of this rejection is respectfully requested.

#### **Rejection Under 35 U.S.C. § 102**

The Examiner rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by Lu and Dunlap (1999). Applicant respectfully requests reconsideration.

Applicant has amended claim 1 to recite specifically SEQ ID NO:45 and functional fragments thereof that have N-type calcium channel activity. The Lu and Dunlap reference does not describe this sequence or fragments thereof having voltage regulated calcium influx activity, and therefore does not disclose all of the elements of the claimed invention. Accordingly, withdrawal of this rejection is respectfully requested.

#### **Rejection Under 35 U.S.C. § 103**

The Examiner rejected claims 1, 37, and 41 under 35 U.S.C. § 103(a) as being unpatentable over Lu and Dunlap (1999). Applicant respectfully requests reconsideration.

Applicant has amended claim 1 to recite specifically SEQ ID NO:45 and functional fragments thereof that have N-type calcium channel activity. The Lu and Dunlap reference does not teach or suggest this sequence or fragments thereof having voltage regulated calcium influx

activity, nor does it provide the person of ordinary skill in the art with a reasonable expectation of success in obtaining the claimed invention. Accordingly, withdrawal of this rejection is respectfully requested.

### **CONCLUSION**

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,  
*Lipscombe, et al., Applicant*

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